[redacted]
[redacted]
Tucson, AZ 85711
[redacted]
NativesOutdoors: [redacted]
Work: [redacted]
Personal: [redacted]

EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Engineering and Public Policy, Doctorate — Jan 12' – Aug. 16'
GPA: 3.79/4.0

My doctoral thesis is focused upon the development of a technical decision tool for energy resource management on the Navajo Nation that incorporates cultural values into its development. Decisions on the management of energy resources are complex and requires tradeoffs between technical and societal outcomes. The multidisciplinary methods that I employ in this research can enable future decision making tools to better represent both energy systems and the societies they serve. By determining how cultural values relate to energy use and impacts, we can better understand how these factors inform preferences about energy resources and thus develop technical tools more reflective of the societies and individuals they serve. Toward this goal I have developed an HTML based decision tool for public engagement as well as a more complex capacity expansion model based upon the MARKAL/TIMES framework. The development of these tools was informed by a series of mental-model interviews on the Navajo Nation to determine the role of cultural values and views associated with the environmental, economic, and societal outcomes of energy resource development.

University of Kansas — Lawrence, KS
Mechanical Engineering, Bachelor of Science, May 2011 — Aug 07' – May 11'
GPA: 3.1/4.0

United World College of the American West (UWC-USA) — Montezuma, NM
International Baccalaureate Diploma, May 2007. — Aug 05' – May 07'
IB Score: 39/42

Selected as 1 of 25 American students selected to attend UWC with 200 students from 92 countries to complete a 2-year International Baccalaureate diploma program with a service oriented curriculum.

ENTREPRENEURSHIP

NativesOutdoors, PBC — Denver, CO
CEO & Founder — Mar 17' – Present

NativesOutdoors is an Outdoor Apparel, Consulting, and Media public benefit corporation (B-Corp). We work directly in the intersection of the outdoor industry, indigeneity, and conservation for the benefit of indigenous people. We work with and celebrate the talents of indigenous designers, photographers, outdoor athletes, and communities through our products for everyone to enjoy. We donate a portion of our sales of NativesOutdoors products to native-run non-profits that work in the areas outdoor recreation, language & culture revitalization, and environmental justice.

WORK & RESEARCH EXPERIENCE

University of Arizona — Tucson, AZ
Assistant Professor, American Indian Studies — August 18' - Present

Research and teaching focuses on the intersection of natural resource management, climate, and indigenous people.

US Department of Energy's Office of Indian Energy — Golden, CO
Energy Analyst & Project Monitor (Contractor) — Aug 16' – Dec 17'

Federal contractor to the U.S. Department of Energy's Office of Indian Energy Policy and Program Golden, Colorado field office. Roles and responsibilities include the research, analysis, improvement of operations and strategic direction of the Office of Indian Energy. Work has included the quantification of impacts of renewable energy deployment through the Department of Energy.

Sandia National Laboratories — Albuquerque, NM
Graduate fellow for the U.S. Department of Energy's Office of Indian Energy Policy and Programs — Washington, DC
May 13' – Jun 16'

As a graduate fellow for Sandia National Laboratories and the Department of Energy I have conducted research, direct technical assistance to American Indian tribes on energy issues, and programmatic development with the Department of Energy's Office of Indian Energy Policy and Programs in Washington, D.C. Research has included the development of technical models for energy resource assessment for tribes and an expert elicitation in order to identify barriers to renewable energy development on tribal lands and pathways for increased deployment in the future. Direct technical assistance has included leading facilitated discussions within a strategic energy planning sessions with tribal leadership, staff, and community members. Work with the Office of Indian Energy Policy and programs has included research and contribution to the 2016 Quadrennial Energy Review and also legislative research relating to Indian energy policy.

NASA Glenn Research Center — Cleveland, OH
Graduate Intern – Controls and Dynamics Branch — May 11' – Aug 11'

As a graduate intern in the controls and dynamics branch, I developed a thrust model using C++ and Matlab for a commercial turbofan engine based upon the General Electric J85 engine. Major contributions included development of a full engine thrust model that included variable compressor bypass, shock positioning inlet nozzles, as well as variable exhaust nozzles. This engine model was incorporated into a larger supersonic vehicle control system in order to study the effects of thrust variations on vehicle control from flow disturbances caused by fuselage flex.

NASA Glenn Research Center — Cleveland, OH
Undergraduate Intern – Materials and Structures Division — May 10' – Aug 10'

As an undergraduate intern I conducted a parametric study of a material model for a Ceramic Matrix Composite (CMC) used within a finite element analysis software. The parametric study Assessed the impact of manufacturing defects on overall strength and fatigue life of the CMC under cyclical tensile and shear loading. Study results were validated load and fatigue testing of CMC samples.

PUBLICATIONS

Necefer, L., Wong-Parodi, G., & Small, M. J. (In Review). Quantitative assessment of the efficacy of energy resource management tool with the incorporation of cultural factors.

Necefer, L., Wong-Parodi, G., & Small, M. J. (2018). Understanding the influence of cultural impact information in a decision tool for energy resource management. *Energy Strategies Reviews*.

Jones, T. & **Necefer, L.** (2016) *Barriers to Renewable Energy Development on Tribal Lands*. Sandia National Laboratories – Tribal Energy Program

Necefer, L., Wong-Parodi, G., & Small, M. J. (2016). Integrating technical, economic and cultural impacts in a decision support tool for energy resource management in the Navajo Nation. *Energy Policy*. (Under review)

Necefer, L., & Jones, T. E. (2016). Assessing the barriers and pathways for renewable energy development on tribal lands. *Energy Policy* (Under Review)

Pasqualetti, M. J., Jones, T. E., **Necefer, L.**, Scott, C. A., & Colombi, B. J. (2016). A Paradox of Plenty: Renewable Energy on Navajo Nation Lands. *Society & Natural Resources*, 1-15.

Necefer, L., Wong-Parodi, G., Jaramillo, P., & Small, M. J. (2015). Energy development and Native Americans: Values and beliefs about energy from the Navajo Nation. *Energy Research & Social Science*, *7*, 1-11.

Necefer, L. (2014) *Tribal energy system modeling: a community based method for energy policy planning*. Sandia National Laboratories – Tribal Energy Program

Clemon, L., Mattson, J., Moore, A., **Necefer, L.**, & Heilman, S. (2011). The Smart Grid, A Scale Demonstration Model Incorporating Electrified Vehicles. *The Journal of Undergraduate Research*, 11.

BOARD EXPERIENCE

The Honnold Foundation Board Member — Salt Lake City, UT
Foundation of Pro-climber Alex Honnold — August 18'- Present

Center for Jackson Hole, Board Treasurer — Jackson, WY
Center for Jackson Hole — Nov 17' - Present

The Center for Jackson Hole is a 501c3 nonprofit organization whose mission is to strengthen the coalition of interests devoted to our public lands by investing in the future of their constituencies. We achieve this mission via two main programs: SHIFT, an annual festival, held each autumn in Jackson Hole, that explores issues at the intersection of conservation, outdoor recreation and cultural relevancy; and The Emerging Leaders Program, which trains a culturally diverse group of young outdoor recreationists to lead the conservation conversation.

Colorado Outdoor Recreation Industry Office Advisory Council Member — Denver, CO
State of Colorado, Colorado Office of Economic Development and International Trade — Jan 18' - Present

The mission of the Colorado Outdoor Recreation Industry Office is to inspire industries and communities to thrive in Colorado's great outdoors. We do this by focusing on four impact areas: (1) Economic development, (2) Conservation and stewardship, (3) Education and workforce training, (4) Health and wellness. The provides a central point for contacts, advocacy and resources for constituents, businesses, and communities that rely on the continued health of the outdoor recreation industry.

Statewide Comprehensive Outdoor Recreation Plan (SCORP) Advisor — Denver, CO
State of Colorado, Colorado Parks & Wildlife — Jan. 18' – Present

Partners in the Outdoors Conference Advisory Committee Member — Denver, CO
State of Colorado, Colorado Parks & Wildlife. — Jan 18' – May 18'

MAGAZINE, ONLINE PUBLICATIONS, & MEDIA

Film

Necefer, L. & Baklin, G. Intersection of the indigenous stories Bears Ears & the Arctic National Wildlife Refuge (In Production)

Baklin, G., Cochrane, J., Gall, J., & Necefer, L. MESSENGERS - A Running Story of Bears Ears & Grand Staircase-Escalante. https://vimeo.com/253329792

Outdoor Industry Publications

Necefer, L. (2018). Yoołgaii Asdzáán biyáázh nishłį. Dził dadiyinígíí biyáázh daniidlį. I am the child of White Shell Woman. We are the children of the mountains. Alpinist Magazine. (In Review)

Scowcroft G., Necefer, L (2018). Sisnaajini: Stories from White Shell Mountain. Alpinist Magazine Podcast. http://www.alpinist.com/p/podcast

Necefer, L., Sanford, J. (2018, July 25) Op-Ed: Stop Buying "Native Inspired" Designs. Outside Magazine. Retrieved From: https://www.outsideonline.com/2328411/stop-buying-native-inspired-designs

Necefer, L. (2018) Native Senders, Native Defenders. American Alpine Club's 2018 Guide To Membership. https://issuu.com/aalpineclub/docs/aac_gtm_2018

Energy

Necefer, L. (2014, July 22). DOE Tribal Intern Focuses on Integrating Energy Policy and Navajo Cultural Values. [Web log post]. Retrieved from: http://www.energy.gov/indianenergy/articles/doe-tribal-intern-focuses-integrating-energy-policy-and-navajo-cultural-values

Necefer, L. (2014, November 7). Technical Models Informed by Indigenous Cultural Values [Web log post] Retrieved from: https://blog.epa.gov/blog/2014/11/technical-models-informed-by-indigenous-cultural-values/

Pasqualetti, M. J., Jones, T. E., **Necefer, L.**, Scott, C. A., & Colombi, B. J. (2016, February 23). The question of renewable energy on tribal lands. Retrieved from: https://asunow.asu.edu/20160223-solutions-navajo-nation-renewable-energy

PRESS COVERAGE

A 250-mile protest run: the fight to save Navajo land and US national parks (2018, Mar 7). *The Guardian*. https://www.theguardian.com/lifeandstyle/the-running-blog/2018/mar/07/a-250-mile-protest-run-the-fight-to-save-navajo-land-and-us-national-parks

Picture More People Outdoors (2017, Jul 18). Santa Fe Reporter. https://www.sfreporter.com/news/theenthusiast/2017/07/18/picture-more-people-outdoors/

An online campaign is raising awareness of the indigenous names of US mountains (2018, Feb 26). Lonely Planet. https://www.lonelyplanet.com/news/2018/02/26/native-american-names-usa-outdoors/

This Account is Reclaiming the Indigenous Names for Mountains One Geotag at a Time. Smithsonian Magazine (2018, Feb 22). https://www.smithsonianmag.com/smart-news/social-media-can-let-people-know-about-mountains-indigenous-names-180968186/

Outdoor Retailer show in Denver brings out the politics (2018, July 23). Durango Herald. https://durangoherald.com/articles/233119

What climbers need to know about sacred lands (2017, Nov 23). 9News Denver. https://www.9news.com/article/news/local/what-climbers-need-to-know-about-sacred-lands/73-494151788

Native American Climber Works to Restore Indigenous Names to Peaks (2018, Mar 24). Sierra Magazine http://www.sierraclub.org/sierra/native-american-climber-works-restore-indigenous-names-peaks

Tribal Leaders Plan Summit For Denver In Wake Of National Monument Changes (2018, Jan 22). KUNC. http://www.kunc.org/post/tribal-leaders-plan-summit-denver-wake-national-monument-changes#stream/0

NativeOutdoors Wants To Bridge Gap Between Native Americans And Outdoor Enthusiasts (2018, Jan 25). CPR: Colorado Matters. http://www.cpr.org/news/story/nativeoutdoors-seeks-to-bridge-gap-between-native-americans-and-outdoor-enthusiasts

This Navajo Man Says Tribes Should Decide the Future of Public Lands (2018, Feb). 5280 Magazine. https://www.5280.com/2018/01/navajo-man-says-tribes-decide-future-public-lands/

Giving Mountains Back Their Indigenous Names (2018, Feb 13). Outside Magazine. https://www.outsideonline.com/2277891/giving-mountains-back-their-indigenous-names

Protecting Public Lands, Together: An Interview with Len Necefer of NativeOutdoors (2017, Dec 4). Medium. https://medium.com/@georgieabel/protecting-public-lands-together-an-interview-with-len-necefer-of-nativeoutdoors-a9bad7176167

NUMEROLOGY: NATIVE RIGHTS (2018, May 31st). Elevation Outdoors. https://www.elevationoutdoors.com/numerology-native-rights/

Messengers: A 250 Mile Relay Across Bears Ears and Grand Staircase Escalante. Patagonia' Cleanest Line Blog. https://www.patagonia.com/blog/2018/02/messengers-a-250-mile-relay-across-bears-ears-and-grand-staircase-escalante/

NATIVESOUTDOORS FOUNDER LEN NECEFER IS CHANGING HOW WE VIEW PUBLIC LANDS (2018) The Dyrt Blog. https://blog.thedyrt.com/lifestyle/nativesoutdoors-founder-native-perspective-on-public-lands/

PRESENTATIONS

PARTNERING WITH INDIGENOUS TRIBES OFFERS HOPEFUL PATH FOR PUBLIC LANDS PRESERVATION (2018). Outdoor Retailer January Snow Show. https://outdoorindustry.org/press-release/partnering-with-indigenous-tribes-offers-hopeful-path-for-public-lands-preservation/

Necefer, L. *Diversity in the Outdoors: Native American Perspective*. REI Event at Denver Flagship Store Event. May 3rd, 2017

Necefer, L. *Culturally informed energy resource management planning tools for the Navajo Nation*. AISES National Conference. Minneapolis, MN. November 21, 2016.

Necefer, L. *Renewable Energy and American Indians: Challenges and Paths Forward.* Energy Policy Institute 6th Annual Conference. Santa Fe, NM. September 23-24th, 2016

Necefer, L. *American Indians and Renewable Energy*. United World College Annual Conference on Energy and the Environment. Montezuma, NM. February 5, 2016

Necefer, L. *Culturally informed energy resource management planning tools for the Navajo Nation*. AISES National Conference. Phoenix, AZ November 19-22, 2015

Necefer, L., & Jones, T. *Identifying Barriers and Predictors for Success for Renewable Energy Development on Tribal Lands*. AISES National Conference. Phoenix, AZ November 19-22, 2015

Necefer, L., & Jones, T. *Identifying Barriers and Predictors for Success for Renewable Energy Development on Tribal Lands*. National Tribal Energy Summit hosted by National Council of State Legislatures and Department of Energy. Washington, DC. September 22-25, 2015.

Necefer, L., & Jones, T. *Barriers to Renewable Energy Development on Tribal Lands*. 14th Annual Department of Energy EERE Tribal Energy Program Review. Denver, Colorado. May 3-7th, 2015.

Necefer, L. *Energy System Optimization Tools Informed by Indigenous Cultural Values for American Indian Nations*. Presentation to the Secretary of Energy, Dr. Ernest Moniz. Tempe, AZ. December 10th, 2014.

Reno, M., Tidwell, V., **Necefer, L.** *Collaborative System Dynamics Modeling & Analysis for Integrated Resource Planning in Indian Country*. Webinar hosted by Department of Energy's Office of Indian Energy, Tribal Energy Program, Western Area Power Administration, and Sandia National Labs. September 10th, 2014

Necefer, L., & Jones, T. *Decision Making Framework for American Indian Energy Policy*. 4th Annual Energy Policy Research Conference hosted by the Energy Policy Institute. San Francisco, CA. September 3-5th, 2014

Necefer, L., Wong-Parodi, G., Jaramillo, P., Small, M. *Stakeholder-driven Analytical energy resource management tool for the Navajo Nation*. Navajo Energy Summit. Flagstaff, Arizona. July 23rd-24th

Necefer, L., & Jaramillo, P. *Using LCA to inform participatory governance tools for energy policy on the Navajo Nation*. LCA XIII. Orlando, Florida. October 1st-3rd – 2013

Necefer, L., & Jaramillo, P. *Participatory Decision Making for Navajo Energy Considering Cultural Impacts*. Western Energy Policy Research Conference, Portland, Oregon. September 4th-6th – 2013

Clemon, L., Nicholas, S., Depcik, C., Mattson, J., Strecker, B., Moore, A., **Necefer, L**., & Heilman, S. "*Renewable Energy and Electric Vehicle Incorporation into the Smart Grid" 2011 Conference of the International Society for Industrial Ecology"*, Berkeley, California, June 11-15th 2011

Necefer, L. & Liu, K. Multiscale deformation/damage modeling of Ceramic Matrix Composites: Parametric Study of Ceramic Matrix Composites for Multiscale Modeling. American Indian Science and Engineering Society (AISES) Conference, Albuquerque, New Mexico, November 4th-7th, 2010.

FELLOWSHIPS AND SCHOLARSHIPS

Environmental Protection Agency - Science To Achieve Results (STAR) Fellowship — Washington, DC
Fellowship for Ph.D. Study — 2011 - 2014

El Paso Natural Gas Company Navajo Scholarship — Pittsburgh, PA
Office of Navajo Nation Scholarship and Financial Assistance – Carnegie Mellon University — 2013 - Current

Burlington Northern Santa Fe (BNSF) Scholarship — Lawrence, KS
American Science and Engineering Society Scholarship – University of Kansas — 2007 - 2011

Mike Shinn Scholarship — Lawrence, KS
University of Kansas — 2007 - 2011

Ford Motor Company Scholarship — Lawrence, KS
American Indian College Fund – University of Kansas — 2008 - 2010

Chief Manuelito Scholar — Lawrence, KS
Office of Navajo Nation Scholarship and Financial Assistance – University of Kansas — 2007 - 2011

Davis United World College Scholar Montezuma, NM
UWC-USA and Davis Foundation 2005 - 2007

AWARDS

1st Place Graduate Presentation Competition – AISES National Conference Phoenix, AZ
American Science and Engineering Society 2015
Presented dissertation research with presentation titled "Culturally informed energy resource management planning tools for the Navajo Nation"

Formula Hybrid Competition – 3rd Place Overall Loudon, NH
Carnegie Mellon Formula Racing Team 2013

Link Energy Foundation Fellowship – Honorable Mention Pittsburgh, PA
Carnegie Mellon University 2013

EPA's P3 Design Competition for Sustainability – Honorable Mention Washington, DC
University of Kansas Ecohawks Senior Design Project 2011

I developed and presented a small-scale smart grid model that will be implemented as a solar energy filling station at the University of Kansas through the KU Ecohawks senior design project.

2nd Place Undergraduate Presentation Competition – AISES National Conference Albuquerque, NM
American Science and Engineering Society 2010

Presented technical research on work at the NASA Glenn Research Center pertaining to Multiscale Modeling of Ceramic Matric Composites for use in aerospace applications.

SKILLS

Technical

- Integrated assessment models for human-environmental and human-energy systems
- Energy system modeling
- Environmental modeling
- Uncertainty and risk analysis
- Statistical modeling
- Advance manufacturing
- Environmental lifecycle assessment
- Technical Policy Analysis

Software

- Microsoft Office
- C++ / Matlab
- Analytica
- Solidworks
- SPSS
- R

Social Sciences

- Human risk perception and decision making
- Risk communication

- ToP Facilitation
- Statistical analysis of human subject experiments
- Development of decision support tools for energy and environmental decision making
- Design of human subject experiments (Survey & Interviews)

COURSEWORK

Carnegie Mellon University – Engineering and Public Policy

Engineering
CO_2 capture and sequestration
Numerical optimization of energy and control systems
Mathematical modeling of environmental quality systems
Probability and statistical estimation methods for engineering systems
Environmental lifecycle assessment

Decision Sciences
Experimental design of behavior and social sciences
Analysis of uncertain social systems
Theory of practical policy analysis
Ph.D. Microeconomics
Quantitative methods for policy analysis
Environmental Politics & Policy

University of Kansas – Mechanical Engineering

Engineering
Statics
Strength of Materials
Thermodynamics
Circuits, Electronics & Instrumentation
Thermal Systems
Fluid Mechanics
Mechanisms
Dynamics of machinery
Finite element methods / stress analysis
Control systems
Microcomputer applications in mechanical engineering
Numerical Analysis
Heat Transfer
Gas Dynamics

Mathematics
Applied Differential Equations
Linear Algebra
Calculus

PROJECTS

Carnegie Mellon Racing - Formula SAE (FSAE) and Formula Electric — Pittsburgh, PA
Graduate Advisor, Race Operations Lead, and Driver — May 12' – May 16'

Served as technical advisor in the development, construction, and testing phases of the 2013, 2014, 2015, 2016 Formula SAE and Formula electric racecars with Carnegie Mellon Racing. Participated in 2013 Formula SAE Michigan and 2014 Formula Hybrid competitions as a driver. Responsibilities included technical advising of 20 undergraduate students; vehicles testing, tuning, and validation; and the development of driver training programs.

Rainwater Catchment Project on Navajo Nation — Tsaile, AZ
Engineers without Borders - Project Lead — 2010 – 2011

Climate change will impact many agricultural communities in the Southwestern United States from decreased precipitation and changing weather conditions. I developed a student project aimed to address these impacts through the development of a rainwater catchment system and terraforming of ground features for use in an agricultural setting. Prototype water catchment system for a home residence was developed in June 2011 and land was surveyed for installation of water catchment tank.

Jayhawk Motorsports - Formula SAE (FSAE) — Lawrence, KS
Sustainability Lead — 2007 – 2010

I integrated a waste management and recycling program into the construction of the 2009 and 2009 Formula racecars. Landfill waste was reduced by 60% over the course of the implementation of the program. Over 1 ton of materials such as carbon fiber, cardboards, plastics, and metals were recycled over the 2 years. This provided significant insight into the implementation of sustainability practices in the vehicle construction practices.

KU Engineering Recycling Initiative — Lawrence, KS
Project Lead — 2009 – 2010

I developed a student-run recycling program that focused on the needs of the school of engineering. This recycling program served a school of 2,500 individuals and required optimization of bin placement and collection schedules. I learned the importance of adapting to shifting demand of different departments and accommodating accordingly. Program was institutionalized by the school of engineering in 2011.